

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF OPERATIONS

November 2003

DECORATIVE FLUTED FIBERGLASS DIRECT BURIAL
RESIDENTIAL LAMP POST

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of fiberglass direct burial decorative residential streetlight post. The decorative fluted residential, round, tapered, direct burial fiberglass pole shall be made of reinforced fiberglass composite (fiberglass filament and color pigmented resin), with a polyurethane and UV inhibitor coating, with natural finish. This decorative fiberglass streetlight post is intended for use along residential roadways, walkways, and tunnels throughout Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each post shall include one (1) handhole cover plate with attachment hardware.

2) DESIGN CRITERIA

2.1 AASHTO Standards

The fiberglass direct burial decorative fluted residential streetlight post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2 Wind Load

The fiberglass direct burial decorative fluted residential streetlight post shall be designed to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of an 100 MPH wind with a 1.3 gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The fiberglass direct burial decorative fluted residential streetlight post shall have an EPA allowable for the following assumptions:

- a) Streetlight luminaire shall be assumed to be rectangular in shape with triangular shapes at the top and bottom, minimum length plus width of sixty-five (65) inches, when viewed from the side.
- b) The streetlight luminaire shall have a nominal mounting height of 12 feet above the ground.
- c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

- a) The residential, round, tapered, direct burial fiberglass pole shall be constructed by a winding filament process with color pigmented polyester resin impregnated into the filaments. The filament winding shall be continuously applied with uniform tension.
- b) The resin used will be color pigmented and shall be ultraviolet resistant. A highly weather resistant pigmented polyurethane coating shall be applied to the pole at a minimum thickness of 1.5 mils.

4) POLE SHAFT

The shaft shall taper uniformly from 6 ½ inches outside diameter at the bottom to a minimum of 4 ½ inches outside diameter at the top. The shaft section shall consist of sixteen (16) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft.

5) HEIGHT

The height of the post, less tenon, shall be 16 feet. The post shall have 12' of exposed post above the ground and 4' of embedded post in the ground, as shown on drawing.

6) TENON

The top of the post shall be equipped with a luminaire mounting tenon integrally cast as a part of the post casting. The tenon shall measure 3.0 inches outside diameter and be 3 inches long.

7) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamppost and opposite the access door.

8) HANDHOLE

The post shall have an handhole located approximately 12 inches above the ground line. The handhole shall have an opening of 5 inches high minimum and shall be 2 3/8 inches wide minimum. The handhole cover shall be a non-metallic cover and be secured with two tamper resistant stainless steel machine screws.

9) ACCESS HOLE

The post shall have (2) access holes located approximately 18 inches +/- below the ground line. The access holes for wiring shall be opposite each other and shall have rubber grommets provided for each access hole. The access holes shall have an opening of 2 3/8 inches in diameter minimum.

10) FINISH

The residential, round, tapered, direct burial fiberglass pole, access doors, and hardware shall be finished to a semi-gloss black color "Federal Semi-Gloss Black" or approved equal.

